

banded with darker brown. Anal props slender, green with a vertical brown stripe. Anal shield shining green like the head. Spiracles, heretofore unnoticeable, green with a brown line on each side, and from them spread white lines like veins, distinct on the green sides of the larva.

Aug. 27. *4th moult.* 1 inch long. Head large, round, smooth, shining green, with a white line on each side of the median suture, and a black line about halfway between this and the edge of head. This black line was edged with whiter on the outer side. Body green. First three segments had, on each side of dorsum, a wide white longitudinal line, below that a narrower one, below that a broken one. The humps were as before except that on 11th segment, which became double. All the humps were unevenly double, the first point being longer than that behind it, as if the second point grew out of the base of the first. The white patches extended up the sides of the humps, and between these patches the green of the body, on the sides, made oblique lines. Sides and venter green. There was a broken substigmatal line of brown edged above with yellow, extending from head to tips of anal props. Feet green with a vertical dark line. Props. green with a brown bar, this bar being crossed by two darker brown lines.

Aug. 30. The brown of the tips of the humps had almost disappeared, as had the substigmatal line. The principal color was semi-opaque white, through which the deep blue-green of the body appeared in lines here and there,—notably the oblique lines on the sides,—and on the venter.

Sept. 3d. The larva was $1\frac{3}{8}$ inches in length and $\frac{7}{16}$ inch from the venter to the tip of the hump on 5th segment. In the afternoon it grew dull in color, the humps seemed to be retracted, and, the next day, were almost level with the dorsal line, and the larva looked small and moist. It spun a few threads to fasten a leaf to the tin.

Sept. 8th. The pupa appeared. *Pupa* $\frac{11}{16}$ inch long, neither stout nor slender, dark brown with much darker head, thorax, wing-cases, anal point, and bands between the segments. Eye-cases prominent and very smooth. Segments distinctly ridged on the edges, and pitted between these ridges. Anal point long, slender, sharp. The pupa was very active, rolling a foot or more at a time.

MISCELLANEOUS NOTES. — By accident the pages of the last number of *Psyche* were marked April instead of May.

An interesting sketch of protective resemblance as displayed in the animal world was given in February before the Belgian academy by Dr. Felix Plateau, and will be found in its *Bulletins*, pp. 89-135. Interesting examples among insects are given.

A new classification of the Acaroidea with full details and an enumeration of the genera is given by Dr. Trouessart in the *Revue des sciences naturelles de l'Ouest* of Paris for January, 1892. Five suborders and ten families are recognized and six of the latter are separated into twenty-four subfamilies.

The eighth part of the leisurely *Introduction to entomology* by Kolbe has appeared and contains some interesting summaries. The consideration of the muscles is concluded, and the mechanism and physiology of flight and other movements considered with interesting topical bibliographies. The nervous system is then taken up and its main features and especially the brain discussed, followed again by bibliographies.

The extensive but in no way expensive work upon the families and genera of butterflies begun in 1885 by Schatz and continued after his death in 1887 by Röber has just been completed by the publication of the sixth part. The neuration of nearly five hundred different butterflies, representing almost as many genera and accompanied by some rude details of the structure of the legs, palpi, and

antennae, are depicted on the fifty folio plates, while the text (284 pp.) describes the families, lower groups and genera with a statement of the number of species in each. On the plan laid down the work is well and symmetrically done and will prove exceedingly useful; but the classification is bad, the nomenclature of the parts unfortunate, and in the meagre use made of the early stages the hand of the closet naturalist is seen. Furthermore, the work comes to a stop without considering the Hesperidae, except in a single column in the introductory portion on geographical distribution. Schatz evidently intended to include them but Röber quailed before the task. The work can be obtained through Dr. Staudinger of Dresden. A Genera of Butterflies fairly up to the times is still a desideratum.

An interesting summary of his observations on the visits of insects to flowers is given by Robertson in a couple of papers in the recently issued Transactions of the St. Louis academy of science (vol. 5, nos. 3 and 4). The first treats of the insects ob-

served on Umbelliferae, the second on the other orders from Asclepiadaceae to Scrophulariaceae inclusive. The insects were determined by specialists.

The full details of his experiments on destroying chinch-bugs in the field by the introduction of bugs affected by contagious diseases are published by Chancellor Snow in the first report of the experiment station of the University of Kansas.

Under the title Beobachtungen über mückengallen Dr. Fr. Thomas publishes in the Programme of the Ohrdruf Gymnasium observations on cecidomyian galls on thirty different European plants; twelve cases of wholly new cecidia are given, while of eight others the plant host is new.

Dr. Lintner's seventh report on the insects of New York has just been issued; it forms an abundantly illustrated volume of over two hundred pages, about one half of which is given up to accounts of eleven injurious species of different orders. Two papers read before horticultural societies are included in the appendix.

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